What is claimed is:

1. A method for diagnosing an HIV-2 infection which comprises:

(a) contacting genetic DNA or RNA from a body sample obtained from a person suspected of having an HIV-2 infection with a DNA probe derived from at least a portion of the genome of the HIV-2 virus; and

(b) determining whether a hybridized complex is created.

2. The method of claim 1 wherein said body sample is selected from the group consisting of tissue, blood cells, cells and body fluids.

3. The method of claim 1 wherein the presence of the hybridized complex is determined by a process selected from the group consisting of Southern blot, Northern blot and dot blot.

4. The method of claim 1 wherein the cDNA probe is analogous to the entire genome of the HIV-2 virus.

5. A DNA probe capable of hybridizing to the entire genome of the HIV-2 virus.

6. A method for diagnosing an HIV-2 infection which comprises:

(a) contacting sera obtained from a patient suspected of having an HIV-2 infection with a polypeptide expression product of a DNA segment derived from the genome of the HIV-2 virus; and

(b) determing whether an immunocomplex is formed.

7. The method of claim 6 wherein the formation of the immunocomplex is determined by a process selected from the group consisting of radioimmunoassays (RIA), radioimmunoprecipitation assays (RIPA), immunofluoresence assays (IFA), enzyme-linked immunosorbent assays (ELISA) and Western blots.

8. A process for detecting the presence of a virus selected from the group consisting of LAV-II, HIV-2, STLV-III and other viruses which form complexes with LAV-II reagents comprising:

(a) contacting DNA or RNA from a sample suspected of containing viral genetic material with a DNA probe derived from a portion of the genome of the HIV-2 virus; and

(b) determining whether a hybridized complex is created.

9. A peptide selected from the group consisting of env1, env2, env3, env4, env5, env6, env7, env8, env9, env10, env11 and gag1.

10. A kit for diagnosing an HIV-2 infection by the method of claim 6 and comprising env1, env2, env3 and gag1 peptides as the polypeptide expression product.

11. A vaccinating agent comprising at least one peptide selected from the group consisting of env4, env5, env6, env7, env8, env9, env10 and env11 in admixture with suitable carriers.

12. A peptide having common immunological properties with the peptide structure of the envelope glycoprotein of a virus of the HIV-2 class, said peptide having no more than 40 amino acid residues.

13. A peptide according to claim 12 having either of the following formulas:

XR--A-E-D-YL-DQ--L--WGC-----CZ
XA-E-D-YL-DZ

in which X and Z are OH or NH_2 or, to the extent that the immunological properties of the natural peptides lacking these groups shall not be essentially modified, the groups having from one to five amino acid residues, and each of the hyphens corresponding to an aminoacyl residue chosen from those which permit the conservation for the peptide characterized above of the immunological properties of either of the following peptide sequences:

RVTAIEKYLQDQARLNSWGCAFRQVC
AIEKYLQDQ

14. A peptide according to claim 12 having either of the following formulas:

X--E--Q-QQEKN--EL--L---Z
XQ-QQEKNZ

in which X and Z are OH or NH_2 or, to the extent that the immunological properties of the natural peptides lacking these groups shall not be essentially modified, the groups having from one to five amino acid residues, and each of the hyphens corresponding to an aminoacyl residue chosen from those which permit the conservation for the peptide characterized above of the immunological properties of either of the following peptide sequences:

SLEQAQIQQEKNMYELQKLNSW
QIQQEKN

15. A peptide according to claim 12 characterized as having either of the following formulas

XEL--YK-V-I-P-G-APTK-KR-----Z
XYK-V-I-P-G-APTK-KRZ

in which X and Z are OH or NH_2 or, to the extent that the immunological properties of the natural peptides lacking these groups shall not be essentially modified, the groups having from one to five amino acid residues, and each of the hyphens corresponding to an aminoacyl residue chosen from those which permit the conservation for the peptide characterized above of the immunological properties of either of the following peptide sequences:

ELGDYKLVEITPIGFAPTKEKRYSSAH
YKLVEITPIGFAPTKEK

16. A peptide according to claim 12 characterized as having either of the following formulas:

X----VTV-YGVP-WK-AT--LPCA-Z
XVTV-YGVP-WK-ATZ

in which X and Z are OH or NH_2 or, to the extent that the immunological properties of the natural peptides lacking these groups shall not be essentially modified, the groups having from one to five amino acid residues, and each of the hyphens corresponding to an aminoacyl residue chosen from those which permit the conservation for the peptide characterized above of the immunological properties of one of the following peptide sequences:

CTQYVTVFYGVPTWKNATIPLFCAT
VTVFYGVPTWKNAT
EKLWVTVYYGVPVWKEATTTLFCAS
VTVYYGVPVWKEAT

17. A peptide according to claim 16 characterized as having one of the following formulas:

CTQYVTVFYGVPTWKNATIPLFCAT
VTVFYGVPTWKNAT
EKLWVTVYYGVPVWKEATTTLFCAS
VTVYYGVPVWKEAT
EDLWVTVYYGVPVWKEATTTLFCAS
VTVYYGVPVWKEAT
DNLWVTVYYGVPVWKEATTTLFCAS
VTVYYGVPVWKEAT

18. A peptide according to claim 12 characterized as having either of the following formulas:

X---QE--L-NVTE-F--W-NZ
XL-NVTE-FZ

in which X and Z are OH or NH_2 or, to the extent that the immunological properties of the natural peptides lacking these groups shall not be essentially modified, the groups having from one to five amino acid residues, and each of the hyphens corresponding to an aminoacyl residue chosen from those which permit the conservation for the peptide characterized above of the immunological properties of one of the following peptide sequences:

DDYQEITL-NVTEAFDAWNN
L-NVTE
PNPQEVVLVNVTENFNMWKN
LVNVTE

19. A peptide according to claim 18 characterized as having one of the following formulas:

DDYQEITL-NVTEAFDAWNN
L-NVTEAF
PNPQEVVLVNVTENFNMWKN
LVNVTENF
PNPQEIELENVTEGFNMWKN
LENVTEGF
PNPQEIALENVTENFNMWKN
LENVTENF

20. A peptide according to claim 12 characterized as having one of the following formulas:

XL---S-KPCVKLTPLCV--KZ
XKPCVKLTPLCVZ
XS-KPCVKLTPLCVZ

in which X and Z are OH or NH_2 or, to the extent that the immunological properties of the natural peptides lacking these groups shall not be essentially modified, the groups having from one to five amino acid residues, and each of the hyphens corresponding to an aminoacyl residue chosen from those which permit the conservation for the peptide characterized above of the immunological properties of one of the following peptide sequences:

ETSIKPCVKLTPLCVAMK
DQSLKPCVKLTPLCVSLK
KPCVKLTPLCV
SLKPCVKLTPLCV

21. A peptide according to claim 20 characterized as having one of the following formulas:

ETSIKPCVKLTPLCVAMK
DQSLKPCVKLTPLCVSLK
DQSLKPCVKLTPLCVTLN
PCVKLTPLC

22. A peptide characterized as having either of the following formulas:

X---N-S-IT--C-Z
XN-S-ITZ

in which X and Z are OH or NH_2 or, to the extent that the immunological properties of the natural peptides lacking these groups shall not be essentially modified, the groups having from one to five amino acid residues, and each of the hyphens corresponding to an aminoacyl residue chosen from those which permit the conservation for the peptide characterized above of the

immunological properties of one of the following peptide sequences:

NHCNTSVITESCD
NTSVIT
TSCNTSVITQACP
NTSAIT

23. A peptide according to claim 22 characterized as having one of the following formulas:

NHCNTSVITESCD
NTSVIT
TSCNTSVITQACP
NTSVIT
INCNTSVITQACP
NTSVIT
INCNTSAITQACP
NTSAIT

24. A peptide according to claim according to claim 12 characterized as having the following formula:

XYC-P-G-A-L-C-N-TZ

in which X and Z are OH or NH_2 or, to the extent that the immunological properties of the natural peptides lacking these groups shall not be essentially modified, the groups having from one to five amino acid residues, and each of the hyphens corresponding to an aminoacyl residue chosen from those which permit the conservation for the peptide characterized above of the immunological properties of either of the following peptide sequences:

YCAPPGYALLRC-NDT
YCAPAGFAILKCNNKT

25. A peptide according to claim 24 characterized as having one of the following formulas:

YCAPPGYALLRC-NDT
YCAPAGFAILKCNNKT

YCAPAGFAILKCNDKK
YCAPAGFAILKCRDKK

26. A peptide according to claim 12 characterized as having the following formula:

X------A-C------W--Z

in which X and Z are OH or NH_2 or, to the extent that the immunological properties of the natural peptides lacking these groups shall not be essentially modified, the groups having from one to five amino acid residues, and each of the hyphens corresponding to an aminoacyl residue chosen from those which permit the conservation for the peptide characterized above of the immunological properties of either of the following peptide sequences:

NKRPRQAWCWFKG-KWKD
N--MRQAHCNISRAKWNA

27. A peptide according to claim 26 characterized as having one of the following formulas:

NKRPRQAWCWFKG-KWKT
N--MRQAHCNISRAKWNA
D--IRRAYCTINETEWDK
I--IGQAHCNISRAQWSK

28. A peptide according to claim 12 characterized as having either of the following formulas:

X-G-DPE------NC-GEF-YCN-----NZ
XNC-GEF-YCNZ

in which X and Z are OH or NH_2 or, to the extent that the immunological properties of the natural peptides lacking these groups shall not be essentially modified, the groups having from one to five amino acid residues, and each of the hyphens

corresponding to an aminoacyl residue chosen from those which p rmit th conservation for the peptide characterized above of the immunological properties of one of the following peptide sequences:

KGSDPEVAYMWTNCRGEFLYCNMTWFLN
NCRGEFLYCN
-GGDPEIVTHSFNCGGEFFYCNSTQLFN
NCGGEFFYCN

29. A peptide according to claim 28 characterized as having one of the following formulas:

KGSDPEVAYMWTNCRGEFLYCNMTWFLN
NCRGEFLYCN
-GGDPEIVTHSFNCGGEFFYCNSTQLFN
NCGGEFFYCN
-GGDPEITTHSFNCRGEFFYCNTSKLFN
NCRGEFFYCN
-GGDPEITTHSFNCGGEFFYCNTSGLFN
NCGGEFFYCN

30. A peptide according to claim 12 characterized as having either of the following formulas:

X-----C-IKQ-I------G---YZ
XC-IKQ-IZ

in which X and Z are OH or NH_2 or, to the extent that the immunological properties of the natural peptides lacking these groups shall not be essentially modified, the groups having from one to five amino acid residues, and each of the hyphens corresponding to an aminoacyl residue chosen from those which permit the conservation for the peptide characterized above of the immunological properties of one of the following peptide sequences:

RNYAPCHIKQIINTWHKVGRNVY
CHIKQII
TITLPCRIKQFINMWQEVGKAMY
CRIKQFI

31. A peptide according to claim 30 characterized as having one of th following formulas:

RNYAPCHIKQIINTWHKVGRNVY
CHIKQII
TITLPCRIKQFINMWQEVGKAMY
CRIKQFI
SITLPCRIKQIINMWQKTCKAMY
CRIKQII
NITLQCRIKQIIKMVAGR-KAIY
CRIKQII

32. The antigenic peptide gag1 characterized as having the following formula:

XNCKLVLKGLGMNPTLEEMLTAZ

in which X and Z are OH or NH_2 or, to the extent that the immunological properties of the natural peptides lacking these groups shall not be essentially modified, the groups having from one to five amino acid residues, and each of the hyphens corresponding to an aminoacyl residue chosen from those which permit the conservation for the peptide characterized above of the immunological properties of the following peptide sequence:

XNCKLVLKGLGMNPTLEEMLTA

33. An antigenic composition containing at least one gag1 peptide according to claim 32 or at least an oligomer of this peptide, characterized as having the capacity to be recognized by human biological fluids such as serum containing anti-HIV-2 antibodies and under appropriate conditions anti-HIV-1 antibodies.

34. An antigenic composition containing at least one peptide according to claims 13, 14 or 15, or at least an oligomer of the

peptide, characterized in that the peptide specifically recognizes the presenc of anti-HIV-2 antibodies.

35. An immunogenic composition containing at least one peptide according to any one of the claims 16-31 or at least an oligomer of the peptide or the peptide conjugated with a carrier molecule, in association with an acceptable pharmaceutical vehicle for the production of vaccines, the composition characterized in that it induces antibody production against the peptide in sufficient quantities to form an effective immunocomplex with the entire HIV-2 retrovirus and its corresponding proteins.

36. An immunogenic composition according to claim 35 further comprising peptides having formulas corresponding to the envelope glycloprotein sequences of HIV-1 and HIV-2 which have an amino acid homology greater than 50%.

37. An immunogenic composition according to either of claims 35 or 36 having at least one peptide or at least an oligomer of the peptide or the peptide conjugated with a carrier molecule, the composition coresponding to a peptide chosen from the group consisting of Env4, Env5, Env6 and Env10.

38. A procedure for the <u>in vitro</u> diagnosis of HIV-2 infections in a biological fluid, comprising:

contacting the biological fluid with at least one peptide according to claims 12, 13, 14, 15 or 32, or a conjugate of the peptide with a carrier molecule;

detecting the eventual presence in the biological fluid of an antigen-antibody complex by physical or chemical methods.

39. The diagnostic procedure of claim 38, wherein the detection step is performed by a test selected by th group consisting of enzyme-linked immuno absorbant assay (ELISA), immunofluoresence assay (IFA), radioimmunoassay (RIA), and radioimmunoprecipitation assay (RIPIA).

40. A kit for the in vitro diagnosis of an HIV-2 infection in a biological fluid comprising:

a peptide composition containing a peptide according to claims 12, 13, 14, 15 or 32, or a mixture of such peptides, or a conjugate of such peptides with a carrier molecule;

an appropriate reaction environment for the production of an antigen-antibody complex;

one or more reagents adapted for the detection of the formation of antigen-antibody complexes; and

a biological fluid as a reference sample having no antibodies recognized by said peptide composition.

41. An protein selected from the group described in Example 4 consisting of p 16, p 26, p 12, polymerase, Q protein, R protein, X protein, Y protein, env protein, F protein, TAT, ART, U5 and U3.

42. A kit for diagnosing an HIV-2 infection by the method of claim 6 and comprising as the polypeptide expression product a protein of claim 41.

43. A vaccinating agent comprising at least one protein of claim 41 in association with appropriate carriers.